

PATENT SPECIFICATION

161,969

Conversion Date (Germany): Apr. 9, 1929.
Application Date (in United Kingdom): Apr. 18, 1927. No. 11,174/21.

Complete Accepted: July 14, 1929.

COMPLETE SPECIFICATION.

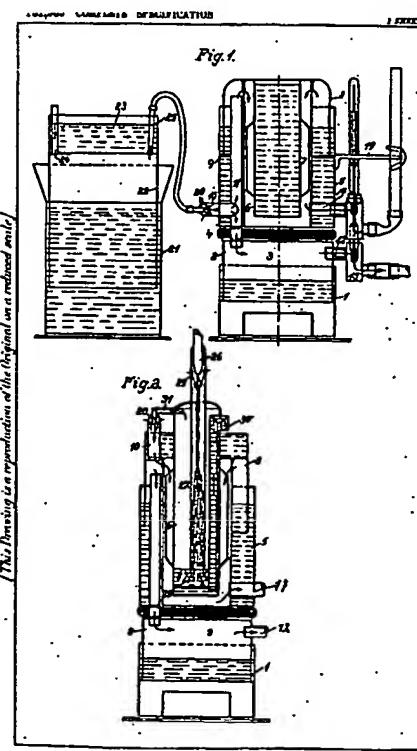
Inhaler.

J. WILHELM, BECKENBACH, of Wiesbaden, in the Free State of Hesse, Germany, of German nationality, hereby declares the nature of this invention and in what manner the same is to be performed, to be particularly described and set forth as follows:

The invention relates to an inhaler 10 with an air compressor which consists of two chambers through which the fresh air flows under pressure, one of said chambers being constructed to form a heatable space for the production of the 15 fraction of hot moist air, the other chamber being constructed to form a real- 20 production refrigerating device for the production of cold dry air and means being provided for mixing the two fractions of 25 cold air and then of hot air.

In accordance with this kind of coupling to the present invention the refrigerating is 30 composed of two parts, one of them in form of an annular receptacle and the other 35 cylindrical, the latter one comprising a bell which dips into said annular receptacle. The cylindrical receptacle is situated in the outer part of the annular receptacle and the walls of 35 the two parts are so arranged that the air 40 can pass through which the air to be cooled is forced, whilst the dip bell 45 contains a space above the two parts in which the compressed air is collected. 50 In this manner it is possible to cool the air which is to be inhaled and is sufficiently cooled to a low temperature although it has only a short travel to make through the apparatus and is exposed to the cold 55 air action only for a very short time. In the invention, however, there is provided a means for producing the compressed air in a simple manner so that the apparatus can be used by any 60 drilled person.

[Price 1/-]



(This Drawing is a reproduction of the Original and reduced size)

151,969

graduation can be obtained as regards degree of cold or dryness. For the heating chamber the regulation by heating is 10 sufficient.

4. The aspiration pipe has a removable 15 separator 13 for the reception of spouts or of the water of condensation and further a thermometer. The aspiration 20 pipe are connected by means of rubber 25 tubes.

10. The apparatus has a holder 18 in that the rubber tube is 20 suspended. Instead of one aspiration socket several such sockets can be provided so that several patients can use one 25 apparatus.

15. The description given relates to both forms of construction. For the production of air under pressure, which could be effected, as in any convenient manner, a dip bell 23 is provided according to Fig. 1 which is slightly inclined to receive a water receptacle 6 which is caused to take up in an upper space 22 water 20 basket in order to regulate the pressure accurately.

20. A separate 1 for water heated in a convenient manner and an inverted cylinder 25 is mounted on the same side of the steam chamber 3. An annular receptacle 4 and a cylindrical bell 5 dipping into said annular receptacle 3 form together the 30 outer which is separated from the heated receptacle by an insulating partition 6. Any other separated arrangement of the two parts is possible.

25. The compressed air produced in a 35 manner which will be described hereafter flows from the supply pipe 10 into the distributing tube 15 and from there on the 40 outer side of the bell 5 and passes into the space between the walls of the 45 two cooling receptacles, the inner of these two receptacles being tightly 50 sealed in the outer by means of guide 55 pins 11, the distributing tube 15 into the 55 outer cooling receptacle 6 and dried air 60 into the inner cooling receptacle 13. The 65 other end into the steam chamber 3 and the tubular outlet 12 for hot 70 moist air.

75. The cooling receptacles are filled with 80 ice and water of cold temperature 85 which is required to meet the individual demand. A horizontal sieve 9 at the 90 lower edge of the dry bell 5 can be used for this purpose in order to keep the ice fragments from falling into the cooling receptacles. 95 A very dry air of moderate temperature can be further produced if the inner receptacle is filled with a cold producing mixture the water 100 receptacle being filled with water. Any

tube not shown in the drawing, a protecting plate 29 prevents air bubbles from getting into the mixture tube.

100. Having now particularly described and 105 set forth the nature of my invention, and in what manner the same is to be performed, I declare that what I claim is:

1. Inhaler with air compressor consisting 110 of two chambers through which the 115 fresh air flows under pressure, one of 120 said chambers being constructed to form 125 a heatable space for the production of 130 the cold air and the other chamber being 135 constructed to form a refrigerating 140 device characterized in that for the 145 production of the cold dry air a refrigerating 150 apparatus of cylindrical shape is provided 155 which has been left in its upper end dipping 160 into the annular base of a second 165 refrigerating bell like an annular receptacle, the compressed air being delivered 170 under said bell.

2. Inhaler as claimed in Claim 1 characterized in that the lower edge of the 180 bell of the lower cooling receptacle 13 is provided with a horizontal perforated 185 ring of sheet-metal or with a sieve which keeps the ice fragments down in the 190 receptacle.

3. Inhaler as claimed in Claim 1 characterized in that an adjustable headed 195 dip bell like a geyserette serves as air 200 compressor, said dip bell being raised in 205 order to be filled starting in fresh air 210 and lowered in order to receive the 215 required amount of steam being carried. It is 220 particularly of such dimensions that one 225 fitting determines also the time prescribed 230 for the inhalation so that the apparatus 235 takes time to be charged each time when 240 the bell is raised.

4. According to Fig. 2 the lower cooling 250 receptacle is constructed so that it serves 255 at the same time as a water jet injector 260 from which the air jet is led through 265 conductive tube 27 and passes into the 270 receptacle 6 as used according to Fig. 1, 275 now however mounted with the supply 280 pipe 10 in the dip bell 5 and feeding the 285 air within the space enclosed in the said 290 dry bell and the water contained in the 295 chamber 3.

5. Inhaler as claimed in Claim 1 characterized in that a water jet injector 300 serves for producing the compressed air.

6. Inhaler as claimed in Claim 1 characterized in that the water jet injector is mounted on the outer side of the steam 350 chamber 3.

7. Inhaler as claimed in Claim 1 characterized in that an adjustable headed 400 dip bell like a geyserette serves as air 405 compressor, said dip bell being raised in 410 order to be filled starting in fresh air 415 and lowered in order to receive the 420 required amount of steam being carried.

8. Inhaler as claimed in Claim 1 characterized in that an adjustable headed 450 dip bell like a geyserette serves as air 455 compressor, said dip bell being raised in 460 order to be filled starting in fresh air 465 and lowered in order to receive the 470 required amount of steam being carried.

9. Inhaler as claimed in Claim 1 characterized in that an adjustable headed 475 dip bell like a geyserette serves as air 480 compressor, said dip bell being raised in 485 order to be filled starting in fresh air 490 and lowered in order to receive the 495 required amount of steam being carried.

10. Inhaler as claimed in Claim 1 characterized in that an adjustable headed 495 dip bell like a geyserette serves as air 500 compressor, said dip bell being raised in 505 order to be filled starting in fresh air 510 and lowered in order to receive the 515 required amount of steam being carried.

Dated this 12th day of April, 1929.

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RECORDED: Printed for His Majesty's Stationery Office, by Lovell & Co., Ltd. - 1929.